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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,617	11/24/2003	David M. Lowe	2003B125	4251

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EXAMINER

HAILEY, PATRICIA L

ART UNIT PAPER NUMBER

1755

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/720,617

Applicant(s)

LOWE ET AL.

Examiner

Patricia L. Hailey

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 22-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 08/24/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1-21, in the reply filed on October 14, 2004, is acknowledged. The traversal is on the ground(s) that "a search with respect to the catalyst claims of Group I would also reveal any art relevant to the use of the respective catalysts in the process of selective hydrogenation of unsaturated hydrocarbons without undue burden." This is not found persuasive because the catalyst claims in their present form are not limited to use in a selective hydrogenation process, i.e., the catalyst claims are not defined exclusively as selective hydrogenation catalysts. As stated in the original restriction requirement, the catalysts as claimed can be used in another and materially different process, such as a process for the isomerization of aromatic hydrocarbons.

Therefore, the requirement is still deemed proper and is therefore made FINAL.

2. Claims 22-30 are hereby withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected process for selectively removing C₂ to C₄ alkynes or diolefins from a feedstock also containing removing C₂ to C₄ diolefins, there being no allowable generic or linking claim.

Specification

3. *The disclosure is objected to because of the following informalities:*

On page 1 of the Specification, in the first paragraph, reference is made to copending applications. However, the references lack application serial numbers, e.g., 10/123,456.

Appropriate correction is required.

4. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. *Claims 1-5 and 8 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being*

unpatentable over claims 1, 10-13, and 18-25 of copending Application No. 10/720,607.

Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are directed to catalyst compositions comprising components that read upon one another. Both respective catalyst compositions comprise rhodium and a support, and the claims in the instant application require the presence of a second component from Groups 1-15 of the Periodic Table, said second component exemplified by indium, a Group 13 element. Indium is recited in the instant application as a second component.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 1-16 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moser et al. (U. S. Patent No. 6,514,904).

Moser et al. teach an alumina (col. 1, line 3 to col. 2, line 48) catalyst with a platinum group metal component (e.g., rhodium) incorporated therein via coprecipitation, ion-exchange, or impregnation, using salts such as rhodium nitrate (col. 5, lines 39-40). See col. 5, lines 3-57 of Moser et al., especially lines 14-20, which discloses a platinum group component mass percentage range of about 0.01 to about 2%.

Moser et al. also disclose that the catalyst may contain optional modifiers such as indium, in amounts ranging from about 0.01 to about 5 mass %. See col. 6, lines 55-67 of Moser et al., which also discloses that the optional modifiers may be incorporated either during or after the preparation of the carrier material (i.e., alumina), or before, during or after the incorporation of the other catalyst components.

Because Moser et al. teach mass percentage ranges that read upon those respectively claimed, one of ordinary skill in the art would easily determine via known mathematic techniques that the molar ratios of platinum group component (e.g., rhodium) to modifier (e.g., indium) would read upon that respectively claimed.

In addition to the aforementioned preparation techniques, calcination and reduction steps are also employed. Calcination can be performed preferably before incorporation of any metals into the support, but also can be performed after incorporation of any metals. Calcination is preferably performed at temperatures ranging from about 370°C to about 600°C. See col. 7, lines 16-39 of Moser et al.

The reduction step can be performed in a substantially water-free environment, and in the presence of gases such as hydrogen, nitrogen, or carbon monoxide, at temperatures ranging from about 315°C to about 650°C. See col. 8, lines 6-30 of Moser et al.

Moser et al. do not teach the exact percentage ranges for rhodium and indium, as recited in the instant claims. However, the percentage ranges taught by

this reference either are within or overlap the percentage ranges respectively recited in the instant claims.

The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness. In re Malagari, 182 U.S.P.Q. 549.

Further, where claimed ranges "overlap or lie inside ranges disclosed by the prior art a prima facie case of obviousness exists." In re Wertheim, 541 F.2d 257, 191 U.S.P.Q. 90 (CCPA 1976).

11. Claims 1-15 and 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robinson et al. (U. S. Patent No. 4,522,935).

Robinson et al. teach a catalyst comprising a platinum group component, an indium component, and a porous support material, wherein the atomic ratio of indium to platinum group component is more than about 1.14. See col. 2, lines 26-35 of Robinson et al. Although this ratio is the reverse of that recited in Applicants' claims, one skilled in the art would easily deduce that inverting the atomic ratio of Robinson et al. would result in a ratio comparable to that claimed by Applicants.

The platinum group component is present in an amount ranging from about 0.01 to about 5 wt. %, and the indium component is present in an amount ranging from about 0.01 to about 15 wt. %. See col. 3, lines 5-14 of Robinson et al.

Examples of the platinum group component include rhodium. See col. 4, lines 20-34 of Robinson et al.

Both the platinum group component and the indium component may be incorporated into the support material via cogelation or coprecipitation with the support material, or by ion exchange or impregnation of the support material. With the indium component, compounds such as indium chloride or indium nitrate may be employed as impregnating solutions. See col. 4, lines 35-52 and col. 5, lines 10-46 of Robinson et al.

Examples of the support material include refractory oxides such as alumina and zirconium dioxide (zirconia). See col. 6, line 41 to col. 7, line 2 of Robinson et al.

In addition to the aforementioned methods of combining the catalyst components with the support material, techniques such as calcination and reduction are employed. Calcination temperatures range from about 700°F to about 1100°F (371.1°C to 593.3°C); reduction is performed under dry hydrogen at conditions including a temperature of about 400°F to about 1200°F (204.4°C to 648.8°C). See col. 7, line 50 to col. 8, line 19 of Robinson et al.

Robinson et al. do not teach the exact percentage ranges for rhodium and indium, as recited in the instant claims. However, the percentage ranges taught by this reference overlap those respectively recited in the instant claims.

The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness. In re Malagari, 182 U.S.P.Q. 549.

Further, where claimed ranges "overlap or lie inside ranges disclosed by the prior art a prima facie case of obviousness exists." In re Wertheim, 541 F.2d 257, 191 U.S.P.Q. 90 (CCPA 1976).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia L. Hailey whose telephone number is (571) 272-1369. The examiner can normally be reached on Mondays-Thursdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark L. Bell can be reached on (571) 272-1362. The fax

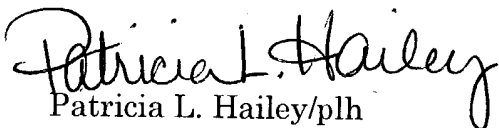
Application/Control Number: 10/720,617
Art Unit: 1755


Page 10

phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 1700 Receptionist, whose telephone number is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Patricia L. Hailey/plh
Examiner, Art Unit 1755
November 29, 2004


Mark L. Bell
Supervisory Patent Examiner
Technology Center 1700